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CHECKLIST

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Checklist of the Diptera families Acartophthalmidae, Canacidae (including Tethinidae), Carnidae and Milichiidae of Finland (Insecta)

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Abstract

A checklist of 29 species in the smaller carnoid families Acartophthalmidae, Canacidae, Carnidae and Milichiidae (Diptera) recorded from Finland is presented. Tethinidae are also included as a subfamily of Canacidae. *Phyllomyza tetragona* Hendel is removed from the list as no reliable records of this species within the post-1944 borders of Finland could be found.

Keywords

Checklist, Finland, Diptera, biodiversity, faunistics

Introduction

The superfamily Carnoidea (*sensu* Buck 2006 but excluding Cryptochetidae, see Wiegmann et al. 2011) includes seven families. The largest by far is Chloropidae, treated in a separate article in this issue. Four of the remaining six are found in Finland: Acar-

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Table 1. Number of species by family.

Family	Number of species in			Level of knowledge
	World (Pape et al. 2011)	**Europe**	**Finland**	
Acartophthalmidae	5	3	3	average
Canacidae	322	38	1	average
Carnidae	93 (Brake 2011)	39	13	poor
Milichiidae	278	43	12–13	average

tophthalmidae, Canacidae, Carnidae and Milichiidae. The remaining two families, Inbiomyiidae and Australimyzidae, are respectively restricted to the Neotropical and Australasian Regions.

All four families are rather poorly studied in Finland. The presence of additional, even undescribed, species is very likely in Carnidae and Milichiidae. The identification of all species of *Meoneura* was verified from male genitalia during the preparation of this checklist with one exception: the male of *Meoneura elongella* (Zetterstedt, 1838) remains undescribed. It is the only North European *Meoneura* with black halteres and as such easily recognised.

World catalogues have recently been published for Canacidae (Munari and Mathis 2010), Carnidae (Brake 2011), and Milichiidae (Brake 2000). The Finnish species of these families were last listed in Hackman (1980).

Checklist

suborder Brachycera Macquart, 1834
clade Eremoneura Lameere, 1906
clade Cyclorrhapha Brauer, 1863
infraorder Schizophora Becher, 1882
clade Muscaria Enderlein, 1936
parvorder Acalyptratae Macquart, 1835
superfamily Carnoidea Newman, 1834

ACARTOPHTHALMIDAE Czerny, 1928
ACARTOPHTHALMUS Czerny, 1902
Acartophthalmus bicolor Oldenberg, 1910
Acartophthalmus nigrinus (Zetterstedt, 1848)
Acartophthalmus pusio Frey, 1947

CANACIDAE Jones, 1906
PELOMYIINAE Foster, 1976
PELOMYIELLA Hendel, 1934
Pelomyiella cinerella (Haliday, 1837)

CARNIDAE Newman, 1834
CARNUS Nitzsch, 1818
Carnus hemapterus Nitzsch, 1818
MEONEURA Rondani, 1856
Meoneura anceps Frey, 1935
Meoneura elongella (Zetterstedt, 1838)
Meoneura flavifacies Collin, 1930
Meoneura glaberrima Becker, 1907
= *neglecta* Collin, 1930
Meoneura lacteipennis (Fallén, 1823)
Meoneura lamellata Collin, 1930
Meoneura minutissima (Zetterstedt, 1860)
Meoneura neottiophila Collin, 1930
Meoneura obscurella (Fallén, 1823)
Meoneura prima (Becker, 1903)
= *seducta* Collin, 1937
Meoneura triangularis Collin, 1930
Meoneura vagans (Fallén, 1823)

MILICHIIDAE Schiner, 1862
MADIZINAE Czerny, 1909
DESMOMETOPA Loew, 1866
Desmometopa m-nigrum (Zetterstedt, 1848)
Desmometopa sordida (Fallén, 1820)
Desmometopa varipalpis Malloch, 1927
LEPTOMETOPA Becker, 1903
Leptometopa latipes (Meigen, 1830)
MADIZA Fallén, 1810
Madiza glabra Fallén, 1820
MILICHIINAE Schiner, 1862
MILICHIA Meigen, 1830
Milichia ludens (Wahlberg, 1847)
PHYLLOMYZINAE Curran, 1934
NEOPHYLLOMYZA Melander, 1913
Neophyllomyza acyglossa (Villeneuve, 1920)
PHYLLOMYZA Fallén, 1810
? *Phyllomyza equitans* (Hendel, 1919)
Phyllomyza formicae Schmitz, 1923
Phyllomyza longipalpis (Schmitz, 1924)
Phyllomyza rubricornis Schmitz, 1923
Phyllomyza securicornis Fallén, 1823
Phyllomyza silesiaca (Duda, 1935)

Excluded species

Phyllomyza tetragona Hendel, 1924 not found within present borders
Tethina grisea (Fallén, 1823) misidentification?
Tethina illota (Haliday, 1838)

Notes

Meoneura. At least two additional, possibly undescribed species occur in Finland.
***Phyllomyza equitans* (Hendel, 1919)**. Only females have been found in Finland.
***Tethina grisea* (Fallén, 1823)** and ***T. illota* (Haliday, 1838)**. Munari and Mathis (2010) list two *Tethina* species from Finland. Krogerus (1932) is mentioned as the source for the *T. grisea* record; there is no listed source for the record of *T. illota*. An older version of the world catalogue (Mathis and Munari 1996) mentions only *T. grisea* from Finland. No Finnish specimens of these species could be found in the Finnish Museum of Natural History (MZH) where most of the material collected by Krogerus is kept, or in any other Finnish insect collection. Unfortunately the identifications in Krogerus (1932) are rather unreliable. It is possible that *Tethina* species occur in Finland, but none are included in this checklist because the evidence for their presence is, in my opinion, insufficient.

References

Brake I (2000) Phylogenetic systematics of the Milichiidae (Diptera, Schizophora). Entomologica Scandinavica Supplement 57: 1–120.

Buck M (2006) A new family and genus of acalypterate flies from the Neotropical region, with a phylogenetic analysis of Carnoidea family relationships (Diptera, Schizophora). Systematic Entomology 31(3): 377–404. doi: 10.1111/j.1365-3113.2006.00328.x

Brake I (2011) World catalog of the family Carnidae (Diptera, Schizophora). In: Brake I, Thompson FC (Eds) Contributions to the Systema Dipterorum (Insecta: Diptera). Myia vol. 12. Pensoft Publishers & North America Dipterists Society, Sofia, Moscow & Washington D.C., 113–169. http://diptera.myspecies.info/sites/diptera.myspecies.info/files/Carnidae_catalog_0.pdf

Hackman W (1980) A check list of the Finnish Diptera. Notulae entomologicae 60: 17–48, 117–162.

Krogerus R (1932) Über die Ökologie und Verbreitung der Arthropoden der Triebsandgebiete an den Küsten Finnlands. Acta Zoologica Fennica 12: 1–308.

Mathis WN, Munari L (1996) World catalog of the family Tethinidae (Diptera). Smithsonian Contributions to Zoology 584: 1–27. doi: 10.5479/si.00810282.584

Munari L, Mathis WN (2010) World catalog of the family Canacidae (including Tethinidae), with keys to the supraspecific taxa. Zootaxa 2471: 1–84. http://www.mapress.com/zootaxa/2010/f/zt02471p084.pdf

Pape T, Blagoderov V, Mostovski MB (2011) Order Diptera Linnaeus, 1758. In: Zhang Z-Q (Ed.) Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. Zootaxa 3148: 222–229. http://www.mapress.com/zootaxa/2011/f/zt03148p229.pdf

Wiegmann BM, Trautwein MD, Winkler IS, Barr NB, Kim J-W, Lambkin C, Bertone MA, Cassel BK, Bayless KM, Heimberg AM, Wheeler BM, Peterson KJ, Pape T, Sinclair BJ, Skevington JH, Blagoderov V, Caravas J, Kutty SN, Schmidt-Ott U, Kampmeier GE, Thompson FC, Grimaldi DA, Beckenbach AT, Courtney GW, Friedrich M, Meier R, Yeates DK (2011) Episodic radiations in the fly tree of life. Proceedings of the National Academy of Sciences of the United States of America 108(14): 5690–5695. doi: 10.1073/pnas.1012675108